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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte TERRY R. DUNLAY and LANSING D. TAYLOR

Appeal 2008-3375
Application 09/718,770
Technology Center 1600

Decided: November 4, 2008

Before ERIC GRIMES, JAY P. LUCAS, and CAROLYN D. THOMAS, *Administrative Patent Judges*.

GRIMES, *Administrative Patent Judge.*

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 involving claims to a cell screening method, which the Examiner has rejected as anticipated. We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

The Specification discloses "a computer controlled optical-mechanical system for rapidly determining the distribution, environment, or activity of fluorescently labeled reporter molecules in cells" (Spec. 6: 3-5). The system

is said to be useful for "screening large numbers of compounds for those that specifically affect particular biological functions" (*id.* at 6: 5-6).

One specific application of the disclosed system is to measure "the translocation (i.e. movement) of fluorescent molecules from the cytoplasm to the nucleus" (*id.* at 12: 24-25). Such translocation is informative because "[r]egulation of transcription of some genes involves activation of a transcription factor in the cytoplasm, resulting in that factor being transported into the nucleus where it can initiate transcription of a particular gene or genes" (*id.* at 15: 3-5). Thus, a "change in transcription factor distribution is the basis of a screen for the cell-based screening system to detect compounds which inhibit or induce transcription of a particular gene or group of genes" (*id.* at 15: 5-7).

Claims 13-18 and 23-25 are pending and on appeal. Claim 13 is the only independent claim and reads as follows:

13. A method for acquisition, storage, and retrieval of cell screening data on a computer system, comprising the steps of:

a) providing a plate containing wells, wherein the wells comprise cells;

b) storing input parameters used for screening of the plate in a computer system database;

c) repeating steps (i)-(ix) for a desired number of wells:

(i) selecting an individual well on the plate,

(ii) collecting subcellular image data from the cells in the well,

(iii) storing the subcellular image data in the computer system database,

(iv) collecting feature data from the subcellular image data,

(v) storing the feature data in the computer system database,

(vi) calculating well summary data using the subcellular image data and the feature data collected from the well;

(vii) storing the well summary data in the computer system database;

(viii) calculating plate summary data using the well summary data from the computer system database; and

(ix) storing the plate summary data in the computer system database;

wherein the subcellular image data, the feature data, the well summary data, and the plate summary data can be retrieved from the computer system database.

All of the pending claims stand rejected under 35 U.S.C. § 102(e)(2) as anticipated by Nova.[1] The Examiner points to several passages of Nova's disclosure, and interprets those disclosures as "represent[ing] collecting, calculating, storing, and retrieving subcellular image data, cell feature data, well summary data, plate summary data in a database, as stated in steps i) through ix) of instant claim 13" (Ans. 5).

Appellants contend that "Nova does not teach or disclose collecting **subcellular image data from cells** in the wells (as required in pending claim 13(c)(ii)), nor, as a result, any further steps involving subcellular image data" (App. Br. 5).

We agree with Appellants that the Examiner has not shown that Nova teaches a method that meets all the limitations of the claims on appeal. The Examiner's position is that

> [w]hen Nova et al. disclose using fluorophors or other luminescent moieties, labeling molecules and biological particles, tagging molecules (abstract), tagging molecules such

[1] Nova et al., U.S. Patent 5,961,923, issued Oct. 5, 1999.

> as antigens, antibodies, ligands, proteins, and nucleic acids and tagging by imprinting the matrix with identifying information (col. 4, lines 58-67 and col. 7, lines 6-15) and cell-based assays using an array of wells to study and monitor differences in biological processes in wells allowing virtually all types of biological molecules to be studied . . . using real time analysis (col. 95, line 25; col. 97, line 35 to col. 98, line 60), the fluorophors and luminescent moieties provide image data when they are monitored and examined in the analysis.

(Ans. 8-9.)

During examination, claims are given their broadest reasonable interpretation consistent with the specification. *In re Hyatt,* 211 F.3d 1367, 1372 (Fed. Cir. 2000). In our view, the Examiner's interpretation of the instant claims is broader than is reasonable when the claims are read in light of the instant Specification.

It is true, as the Examiner has noted (Ans. 8), that the Specification does not expressly define the term "subcellular image data." "Without evidence in the patent specification of an express intent to impart a novel meaning to a claim term, the term takes on its ordinary meaning." *Optical Disc Corp. v. Del Mar Avionics*, 208 F.3d 1324, 1334 (Fed. Cir. 2000). The ordinary meaning of image is "the optical counterpart of an object produced by an optical device (as a lens or mirror) or an electronic device."[2]

The Specification's description of the disclosed method is consistent with the ordinary meaning of "image." The Specification states, for example, that the "invention involves: . . . imaging numerous cells in each location with a fluorescence microscope, [and] converting the optical

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[2] Webster's Ninth New Collegiate Dictionary, Merriam-Webster, Inc., p. 600 (1990).

information into digital data" (Spec. 6: 9-10). The Specification also describes Figure 1 as showing "the components of the cell-based scanning system" (*id.* at 5: 3), including "[a]n inverted fluorescent microscope . . . [and a] high resolution digital camera 7 [that] acquires images from each well" (*id.* at 7: 31 to 8: 6); "[t]he digital camera 7 . . . receives fluorescent light 28 from the microscope assembly" (*id.* at 8: 19-21).

The Specification also states that "[f]or each valid cell, . . . a small image of the cell is stored, and features are measured" (*id.* at 11: 22-24). Finally, the Specification states that "[a]fter a scan of a plate is complete, images and data can be reviewed. . . . Users can review the images alone of every cell analyzed by the system." (*Id.* at 13: 25-28.)

We conclude that, based on the ordinary meaning of "image" and the Specification viewed as a whole, the "subcellular image data from the cells" recited in the claims refers to data, derived from cells, that make up the image of objects that are smaller than a cell.

The Examiner has pointed to Nova's disclosure of labeling proteins with fluorescent or luminescent compounds, and "cell-based assays using an array of wells" (Ans. 8, citing Nova at columns 95 and 97-98) to meet the claim limitation of "collecting subcellular image data from the cells." The passages cited by the Examiner, however, do not disclose a method that includes "collecting subcellular image data," as we interpret that limitation. The cell-based assays taught by Nova in columns 95-98 are a variety of "Scintillation proximity assays (SPAs)" (*id.* at col. 89, l. 51). Nova describes SPAs as

> assays in which quantifiable light energy [is] produced and is related to the amount of radioactively labelled products in the

> medium. The light is produced by a scintillant that is incorporated or impregnated or otherwise a part of a support matrix. The support matrix is coated with a receptor, ligand or other capture molecule that can specifically bind to a radiolabeled analyte, such as a ligand.

(*Id.* at col. 90, ll. 3-5.)

Nova teaches that the light emitted by the scintillant is a result of binding of the radioactively labeled product to the capture molecule on the support matrix because the radioactive labels that are used in SPAs will only activate the scintillant in the support matrix when they are in close proximity to it (i.e., bound to the capture molecule) (*id.* at col. 90, ll. 54-67; col. 91, l. 11).

Nova's cell-based assays involve cells "plated on scintillant plates, and screened against compounds synthesized on matrices with memories" (Nova, col. 95, ll. 62-65). Nova discloses that the cells are cultured on the "scintillant plastic base plate of the wells" (*id.* at col. 97, ll. 60-61) and used to study "any molecule or complex of molecules that interact with the cell surface or that can be taken up, transported and metabolized by the cells" (*id.* at col. 98, ll. 48-50). Nova teaches that the results of the assay are measured using a "flat bed scintillation counter" (*id.* at col. 97, l. 39-40, 49).

Thus, as we understand it, the assay disclosed by Nova involves collecting data on the amount of light produced by a scintillant in response to binding of a radioactively labelled compound to the cells, collectively, in a well of a plate. Quantifying an amount of light, however, is not "collecting subcellular image data" as we interpret that phrase, because the data collected in Nova's assay do not make up the image of objects that are smaller than a cell.

The Examiner has not established that Nova discloses a method meeting all the limitations of the claims on appeal. We therefore reverse the rejection of claims 13-18 and 23-25 as anticipated by Nova.

REVERSED

Ssc:

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